

Appl. No.: 10/740,073
Amtd. Dated February 6, 2006
Reply to Office action of September 12, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claims 1-8 (cancelled).

Claim 9 (currently amended). A carbon fiber-reinforced coke, comprising:

a ~~commonly coked~~ mixture of:

a ~~relatively small~~ proportion of cut carbon fibers or stabilized precursor fibers for forming PAN-based carbon fibers; and

feedstock for a delayed coking process, said feedstock comprising a material selected from the group consisting of highly aromatic residues of vacuum distillation, residues of visbreaking, residues of a fluidized catalytic cracking process, residues of thermocracking, residues of ethylene pyrolysis, soft pitches produced from coal coking or by distillation of highly aromatic coal residues;

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wherein the mixture has been coked in a delayed coker.

Claim 10 (previously presented). The carbon fiber-reinforced coke according to claim 9 formed as needle coke.

Claim 11 (currently amended). The carbon fiber-reinforced coke according to claim 9, wherein said feedstock, upon entering the delayed coker, contains at most 4% by weight of said cut carbon fibers or 8% by weight of said stabilized precursor fibers ~~for forming carbon fibers~~.

Claim 12 (previously presented). The carbon fiber-reinforced coke according to claim 9, wherein said cut carbon fibers or stabilized precursor fibers, upon entering the delayed coker, are from 1 to 30 mm long.

Claim 13 (currently amended). The carbon fiber-reinforced coke according to claim 9, wherein at least one of the following is true for said cut carbon fibers or stabilized precursor fibers ~~for forming carbon fibers~~ upon entering the delayed coker, said fibers or precursor fibers:

are not provided with a size sizing;

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are provided with a size sizing selected from the group consisting of sizes sizings for satisfying objectives of various textile processes;

are provided with a size sizing selected from the groups consisting of:

waxes, montan waxes, and waxes produced synthetically by esterification of fatty alcohols with long-chain fatty acids containing 12 to 40 carbon atoms;

polyurethane, phenolic, polyester, and epoxy resins; and

low-viscosity pitches and pitches dissolved in organic solvents.

Claim 14 (previously presented). The carbon fiber-reinforced coke according to claim 11, wherein said cut carbon fibers are surface-oxidized or non-surface-oxidized.

Claim 15 (previously presented). The carbon fiber-reinforced coke according to claim 13, wherein said waxes are polyolefin waxes based on polyethylene or polypropylene.

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Claim 16 (previously presented). The carbon fiber-reinforced coke according to claim 9, wherein the coke is calcined with a calcining device selected from the group consisting of a rotary tube calciner, a rotary plate calciner, a gas calciner, and an electric calciner.

Claim 17 (previously presented). The carbon fiber-reinforced coke according to claim 9, wherein said proportion of carbon fibers is less than 20% by weight of the coke.

Claim 18 (previously presented). The carbon fiber-reinforced coke according to claim 9, wherein a coefficient of thermal expansion of the coke, measured on specimens produced in accordance with DIN 51930 in an extrusion direction and in accordance with DIN 51909, has values of at most $0.15 \times 10^{-6} K^{-1}$.

Claim 19 (previously presented). A carbon product, comprising a polygranular carbon body formed with the carbon fiber-reinforced coke according to claim 9 and containing at least 70% by weight of carbon.

Claim 20 (previously presented). The carbon product according to claim 19, wherein said carbon fiber-reinforced coke is a needle coke.

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Claim 21 (previously presented). The carbon product according to claim 19, wherein said polygranular carbon is amorphous carbon or graphitized carbon.

Claim 22 (currently amended). The carbon product according to claim 19 formed as a carbon electrode, as a connection piece for a carbon electrode, as a fine-grain graphite and a reactor graphite, as a blast-furnace brick, and or as electrodes for aluminum fused-salt electrolysis.

Claim 23 (withdrawn - currently amended). A method of producing carbon fiber-reinforced coke, which comprises:

mixing cut carbon fibers or stabilized precursor fibers for forming PAN-based carbon fibers into a flow of incoming feedstock to a delayed coking process to form a mixture, the feedstock being selected from the group of highly aromatic residues of vacuum distillation, of visbreaking, of the fluidized catalytic cracking process, of thermocracking, of ethylene pyrolysis or soft pitches produced from coal coking or by distillation of the highly aromatic coal residues; and coking the mixture in a delayed coker.

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Claim 24 (withdrawn). The method according to claim 23, which comprises forming carbon fiber containing needle coke.